

## Astronomy & Physics Division



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# NASA Space Sciences Strategic Planning

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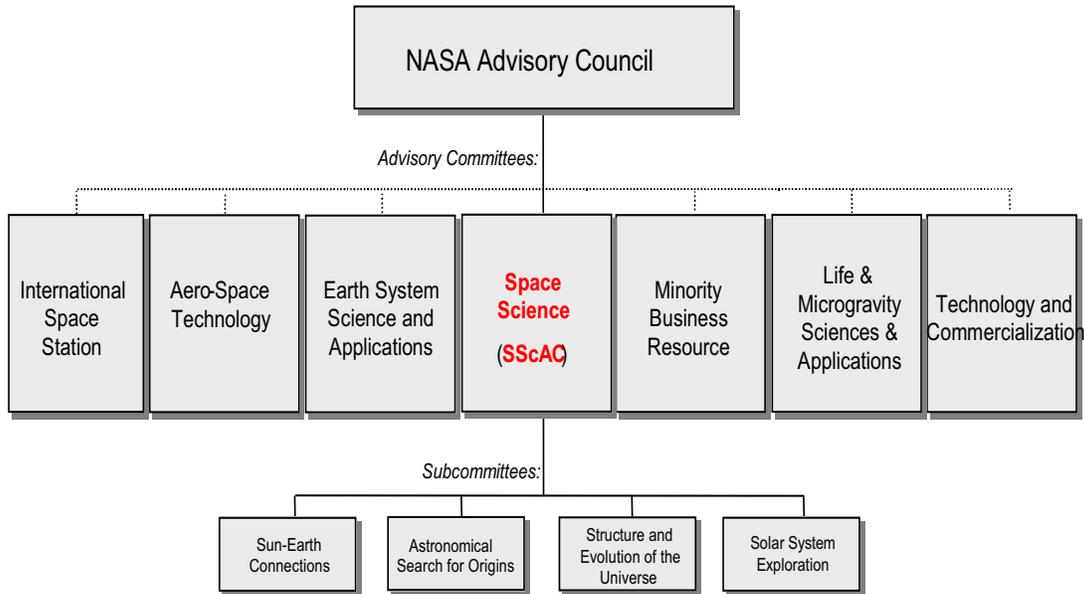
NASA / HQ

## NASA Strategic Planning

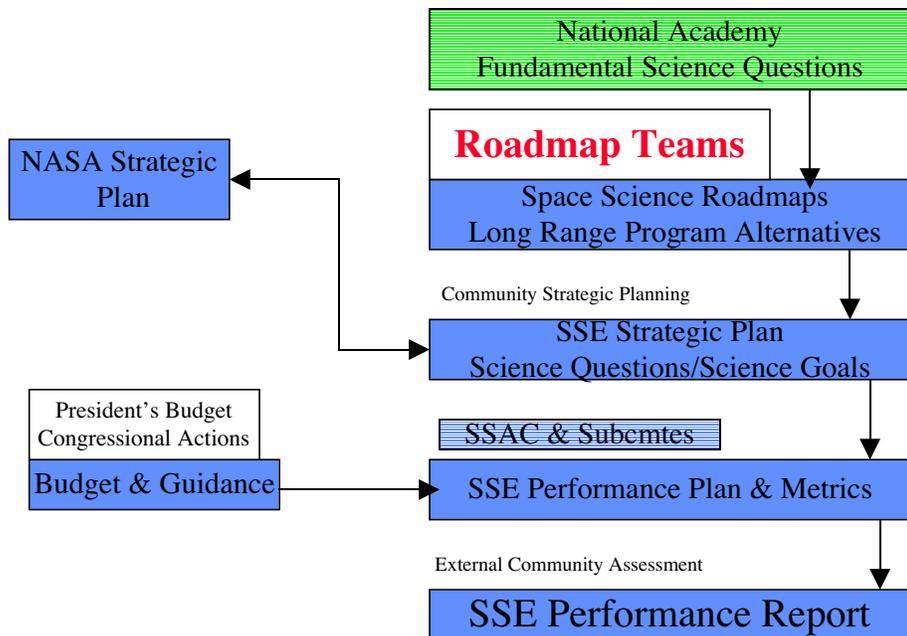


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- NASA Strategic Planning, Roadmaps, GPRA, and all that.
  - Schedule, People, Origins/SEU
  - Issues:
    - Decadal report priorities
    - Breadth of the Research
    - Content

# NASA ADVISORY STRUCTURE



# The Strategic Planning Process



## Purpose



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- Fulfill the strategic planning requirements.
  - Provide a guide to the science community in presenting research requests to NASA.
  - Inform and inspire.
  - Focus investments in technology and research for future missions.
  - Provide the scientific and technical justification for augmentation requests.

## Relevant Time Scales



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- GPRA is an annual event, so the Roadmaps feed this exercise through the Enterprise Strategic Plan.
  - Strategic Planning occurs on a 3 year cycle where the near term outlook is for 5 years.
  - Roadmapping also is on a 3 year cycle, but looks out 10 years and 20 years.
    - For Origins, the next 5-8 years is well defined.
    - For SEU, funding beyond GLAST for LISA, and Con-X is uncertain.



# ASTRONOMY & PHYSICS DIVISION ROADMAPPING ACTIVITIES



- **ORIGINS** Roadmapping basically an update and redirection of the 2000 Roadmap
  - Led by the Origins Subcommittee.
  - Community input through individuals selected for expertise and from meetings like this.
- **SEU** is preparing both a Roadmap, and a new initiative
  - Group of 12 people led by Sterl Phinney.
  - Aimed at generating a new initiative for LISA, Con-X, and several selected smaller missions.
  - Community Input from White Papers and meetings.

## ORIGINS Roadmap Organization



### 1 Co-Chairs

Phil Crane (HQ)  
Alan Dressler (Carnegie)

### 2 Science Leads

Alan Dressler (Carnegie) – Lead  
Lou Allamandola (ARC)  
Adam Burrows (U of A)

### 3 Technology/Instruments

Rich Capps (JPL) – Lead

### 4 Research & Analysis

Hashima Hasan (HQ) – Lead

### 5 Astrobiology

Carl Pilcher (HQ) – Lead

### 6 Missions

Mike Devirian (JPL) – Lead

### 7 Outreach

Carl Pilcher (HQ) – Lead

## SEU Roadmap Team



### Roadmap team:

Sterl Phinney\* (Chair)

Sean Carroll

Sarah Church

Roy Gould

Craig Hogan

Steve Kahn

Dan Lester\*

Robert March

Mike Shull

Simon Swordy\*

Nick White\*

Rocky Kolb\* (SEUS Chair)

Paul Hertz

(SEU Theme Scientist)

Paul DeMinco

(SEU Program Integration Manager)

## ROADMAPPING Cont'd



- ORIGINS Roadmap will be very similar to the 2000 version
  - Origins has a funded program.
    - HST, SIRTF, SIM, NGST, SOFIA, KEPLER, TPF.
    - New mission content in the next several years from Explorer, Discovery, or possibly from a new competed mission line.
  - Future strategic missions must define their science goals and technology needs.
    - Large filled aperture IR mission
    - UV/Optical mission in the 2020 time frame

# Structure and Evolution of the Universe

## 2003 Roadmap

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The SEU Roadmap Team solicited community input in the form of white papers describing mission concepts

### Category 1 - Missions

- **Advanced Compton Telescope (ACT)**
- **Constellation-X**
- **Cosmic Microwave Background Polarization Experiment (CMBPOL)**
- 3a. **Cosmic Microwave Background Polarization Experiment (CMBPOL) Addendum**
- **Energetic X-ray Imaging Survey Telescope (EXIST)**
- **Fresnel Microarcsecond Gamma Ray Imager**
- **Generation-X**
- **Gravitational Echoes Across Time Mission (GREAT)**
- **High-resolution Spectroscopic Imaging Mission (HSI)**
- **International Advanced Radio Interferometry between Space and Earth (IARISE)**
- **Laser Interferometer Space Antenna (LISA)**
- **MicroArcsecond X-ray Imaging Mission (MAXIM)**
- **Next Generation High-Energy Gamma-Ray Astrophysics Mission**
- **Orbiting Wide-angle Light-collectors (OWL)**
- **Probing the Invisible Universe: The Case for Far-IR/Submillimeter Interferometry**
- **Single Aperture Far InfraRed Observatory (SAFIR)**
- **Space UltraViolet/Optical Observatory (SUVO)**
- **The Stellar Imager (SI)**
- **A Facility Far-Infrared Spectrometer for SOFIA**
- **Supernova/Acceleration Probe (SNAP)**
- **Tests of Relativistic Gravity via Solar System Laser Ranging**
- **Ultra-High-Throughput X-ray Telescope Observatory (UXT)**

### Category 2 - Non-Mission Activities

- **"Amicus Brief"**
- **Balloon Program**
- **Bridging the Gap From New Instruments and Data to New Science and Understanding**
- **The DART System for Far-IR/Submillimeter Space Missions**
- **Theory of Rotation in Big Bang Universe**

## Roadmap Issues



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- Decadal Report Priorities and Requests
    - **Specific Missions & Priorities**
    - Competed Missions-- Call for medium size mission like Discovery
    - Other Issues-- Theory, NVO, Lab-Astro
  - Origins/SEU Priorities
    - Astronomy & Physics Div. needs a funded SEU line for LISA, Con-X and for medium size competed missions
    - How to accommodate new content in the next several years

## Roadmap Guidelines



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Reviews and Recommendations that guide the Roadmap priorities:

- [NAS Committee on Gravitational Physics \(1999\)](#)
- [OSS/SEU 2000 Roadmap](#)
- [NAS Physics Survey Overview Committee \(2001\)](#)
- [NAS Astronomy and Astrophysics Survey Committee \(2001\)](#)
- [NAS Committee on Physics of the Universe \(2002\)](#)